THE BASEL III FINANCIAL ARCHITECTURE
AND EMERGING REGULATORY
DEVELOPMENTS IN MACRO PRUDENTIAL
TOOLS

Summary Note for the Ministry of Finance of the Russian Federation

Private and Financial Sector Development Department
Russia Country Department
Europe and Central Asia Region
The World Bank
BASEL III REGULATORY REQUIREMENTS AND DEVELOPMENT OF MACRO PRUDENTIAL TOOLS

1. This note reviews the main elements of the New Basel III global regulatory framework and its regulatory implications, as well as the menu of macro prudential regulatory options to consider for application to ensure more resilient banks and banking systems.

I. THE NEW BASEL III REGULATORY FRAMEWORK

2. The 2008-09 financial crisis revealed shortcomings in the Basel II international bank capital regulatory framework. This prompted the Basel Committee on Banking Supervision to propose new rules (“Basel III”) establishing additional global minimum capital and liquidity standards. The proposed rules aim to address shortcomings of the Basel I and Basel II frameworks for bank capital and the regulatory lessons learned from the crisis. Basel III measures include stricter definitions and an increased level of Tier 1 capital, a framework for counter-cyclical capital buffers, the introduction of a leverage ratio, short and medium-term liquidity ratios, and preliminary work on exploring additional capital requirement for systemically important institutions.

3. Basel III is only one key part of the much wider reform agenda coordinated by the Financial Stability Board (FSB) and the G20 to build a stronger and safer global financial system and ensure its resilience to shocks. The broader reform agenda includes inter alia, strengthening (i) crisis management and resolution, (ii) cross-border resolution, (iii) home-host supervision, (iv) over-the-counter derivatives regulation, (v) refining the regulatory perimeter with respect to securitization, hedge fund operations and other areas/products, (vi) accounting standards including a forward looking expected loss provisioning approach, (vii) compensation practices, (viii) regulation of the core financial infrastructure, (ix) macro-prudential policy frameworks and tools, (x) oversight of credit rating agencies, and (xi) other measures.

4. The Basel Accords, promulgated in 1988 by the Basel Committee on Banking Supervision, established a framework for bank capital measurement and capital standards. The Basel I Accord came into full implementation in 1992, but with the growing complexity of banks and improvements in risk management and measurement, Basel I was inadequate for large cross-border and complex banks and only addressed credit and market risks. Basel I had a simple structure of separating assets into five risk categories and failing to recognize different credit quality within an asset class. As riskier and safer assets carried the same risk weight, the level of capital maintained did not reflect the level of risk taken. Basel I also created incentives for arbitrage, as it allowed lower capital requirements for off-balance sheet activities, incentivizing banks to securitize assets to lower their capital requirements. Basel II also had gaps resulting in incentives for off balance sheet financing.
5. **In 2007 the implementation of Basel II in Europe modified Basel I with the objective of strengthening the capital framework through risk-sensitive minimum capital requirements and complementary risk management measures.** It was designed to better assess the risk of the assets held by banks, by relying on the risk ratings made by the credit rating agencies or internal risk assessments performed by the banks themselves. Besides a much more detailed categorization of asset categories than in Basel I, with several more variations in risk weightings for credit as well as capital requirements for operational risks (all Pillar I measures under Basel II), it set up a Pillar II establishing a supervisory review process allowing imposition of higher levels of capital in line with specific banks’ risk profiles; and a Pillar III aiming to increase market discipline by encouraging bank public disclosures to stakeholders allowing more market and stakeholder oversight.

6. **Basel II’s shortcomings, however, were reflected in resultant low capital and especially for off-balance sheet activities.** Basel II also did not fully address the consistency in the definition of capital allowing banks use innovative hybrid capital instruments to report strong capital ratios but with limited high quality capital. Also, the use of banks’ own internal models in some cases did not capture the full scope or scenario of risks to banks’ portfolios and thus underestimated capital requirements. As well, the dependence on credit rating agencies or internal risk assessment models to determine asset risks, plus inadequate understanding related to complex structured finance products, increased the risks. One of the main drawbacks of Basel II, also impacted by the downward migration of external credit ratings, was the pro-cyclicality that enabled much lower risk weights for assets to be applied in good times, and higher risk weights in bad times as asset values deteriorated, thus accentuating the volatility of the business cycle.

7. While work continues on developing aspects of Basel III, two key changes to banks’ regulatory capital requirements were agreed on September 12, 2010:

8. **Increasing the Quality, Quantity, Transparency, and Consistency of Capital.** Basel III has introduced significantly stricter capital standards for banks, including:

- The *definition of capital* has been strengthened to focus on the core elements of capital instead of debt-like substitutes. In particular, there is a greater focus on common equity: the highest quality capital with the most loss absorbing capacity; and there are new strict deductions to apply (such as deferred tax assets and mortgage servicing rights).

- The *level of common equity* has been raised from the current permissible 2% level before deductions to a minimum of 4.5% of risk-weighted assets (after stricter deductions, 

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1 In addition, critical reforms have been undertaken under the Basel II framework, set out in “Enhancements to the Basel II framework,” and “Revisions to the Basel II market risk framework,” in July 2009. In particular, the rules that govern market risk capital requirements for trading book exposures, securitizations, and off-balance sheet items, have been strengthened and take effect at the end of 2010. The revised trading book framework requires bank to hold around 3-4 times the old capital requirements.
which also tighten up previous interpretations of such). The minimum Tier 1 ratio, including common equity and others forms of loss absorbing capital will increase from 4% to 6%, while the total minimum capital ratio will remain at the existing level of 8%. These new minimum requirements will be gradually phased in between 2013 and 2015.

9. **Reducing pro-cyclicality.** “Basel III” has introduced two capital buffers to reduce pro-cyclicality, i.e., the financial system’s tendency to amplify the ups and downs of the economy, which was seen as one of the main lessons of the crisis (the new leverage ratio also supports the same objective). These new capital buffers are described below:

10. **A capital conservation buffer (CCB)** has been introduced on top of the minimum capital requirements to build capital up in good times and enable banks to draw upon it in periods of stress to absorb losses. The CCB (composed of common equity) will be 2.5% of RWAs to be phased-in between 2016 and 2019. The CCB will also impose a constraint on banks’ distributions (of dividends and bonuses) as banks will face restrictions to pay these if they do not have the buffer in place. Thus, with the added conservation buffer, banks will need 7% common equity, 8.5% Tier 1 capital, and 10.5% total capital.

11. A second buffer to limit pro-cyclicality, the **countercyclical capital buffer (CCCB),** may be imposed by national regulators when there is excess credit growth and a system wide build up of risks. The CCCB would take the form of additional capital above the CCB, in a range of 0% to 2.5% of RWA. National authorities would be able to release the buffer in the downturn of a cycle.

12. **Other key parts of the Basel III rules are being implemented including:** (a) the leverage ratio, (b) additional capital requirements for systemically important banks, (c) forward looking provisioning, and (d) a global liquidity framework. Work on monitoring and calibrating these measures continues to be underway.

(a) **Leverage Ratio.** A leverage ratio has been proposed to constrain the buildup of leverage in the banking sector, and help avoid the sudden disorderly deleveraging that can occur in times of market stress: The ratio is calculated as a minimum of 3% of Tier 1 capital as a percentage over total assets (including off-balance sheet items and gross derivatives exposures, and after deductions) and will be tested from 2013 to 2017 (and formalized as a Pillar 1 requirement in 2018) in order to see how the risk-based requirements and the leverage ratio will interact over the economic cycle.

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2 Technically the requirement was 4% although it was interpreted by several developed countries as 2% given the term that required it to be “predominantly Tier 1,” all Tier 1, thus 2% plus a minor additional small share would have resulted in it being predominantly Tier 1.

3 Thus at a minimum, banks will be required to hold 4.5% in common equity, an additional 1.5% in non-common equity forms of capital to reach a 6% Tier 1 capital ratio, and an additional 2% in Tier 2 (or Tier 1) capital.
(b) **Additional capital for Systemically Important Financial Institutions (SIFIs).** This is being considered to help address systemic risk due to inter-linkages and common exposures across institutions. This could include combinations of capital surcharges, contingent capital, and bail-in debt.

(c) **Forward looking provisioning.** The Basel Committee on Banking Supervision (BCBS) has also provided inputs to the International Accounting Standard Board (IASB) to operationalize forward looking ‘expected loss’ provisioning proposed by the International Accounting Standards Board (IASB) to enable financial institutions to provision for expected (versus already incurred) losses thus moving toward recognizing these earlier and mitigating extreme pro-cyclicality.

(d) **Global liquidity standards.** The BCBS has also proposed minimum liquidity standards that promote the short term resilience of banks to immediate liquidity disruptions and the management of longer term structural liquidity mismatches. The liquidity coverage ratio (LCR) would require banks to maintain sufficient high quality liquid assets to cover net outflows over an acute 30-day stress situation. This ratio will be complemented by the net stable funding ratio (NSFR), designed to address funding mismatches and provide incentives for banks to use stable sources of funding. The NSFR will require banks to fund certain proportion of their assets that mature after one year with liabilities that mature after one year. The LCR will be introduced in 2015 and the NSFR in 2018. Since there is no historical experience with liquidity standards, the BCBS plans to monitor the ratios during the observation period and review their implications for the economy.

13. The Basel Committee has also set out guidelines on margins and haircuts on securities used as collateral. The objective is to dampen pro-cyclical risks and/or periods of market stress, via measures that control margining levels used to finance securities, establish conservative measures for valuations and mark-to-market norms used on collateral, and/or impose haircuts on securities/assets used as collateral to reduce over-leveraging.

14. **Overall, Basel III provides a combination of capital and liquidity standards that enhance the existing regulatory frameworks.** The new rules provide more regulatory clarity and combine enhancements at the micro-prudential level (by raising the quality and quantity of capital) and at the macro-prudential level (addressing pro-cyclicality and systemic risk).

Likely Impact of “Basel III” Regulatory Changes on the Russian Federation

15. **In the medium term, Basel III is expected to significantly strengthen the resilience of the banking sector, reducing the risk of instability and crises.** The reforms are intended to address the shortcomings identified in several countries during the crisis within the existing bank capital framework, to promote a more resilient financial system that can support more sustainable growth. With higher levels of loss absorbing capital, the banking sector of Russia is expected to be in a stronger position to shield its economy from adverse developments in the real sector and allow it to support the economy even during downturns. This will be further
reinforced by the buildup of buffers in good times that can be drawn down in periods of stress, and careful liquidity management.

16. **In the short term however, implementation of Basel III is likely to come with some costs for the economy – costs that are justified as they will help reduce the likelihood of future crises and their costs.** These costs could take the form of: (i) difficulties in implementation, leading to significant technical advisory requirements, as well as (ii) an adverse impact on credit resumption and therefore on private sector and economic growth - although the scope and timing of such impacts are difficult to estimate.

**Implementation Issues and Technical Advisory Requirements**

17. Since the beginning of the crisis, technical advisory services in many areas of banking supervision and regulation have been provided by the World Bank, given the emerging financial architecture. This has covered vulnerability assessments, crisis preparedness, contingency planning, deposit insurance, bank resolution, stress testing, supervisory capacity, impaired loan management, home-host supervision, and other regulatory policies.

18. **Many other reforms in the banking regulatory framework are still needed and pending.** These include issues of consolidated supervision, risk-based supervision, approval frameworks for internal risk models, and better implementation of Pillar 2 (supervisory discretion) and Pillar 3 (market participant oversight) as defined under Basel II.

19. **To implement Basel III, Russia will need to adjust the banking sector’s systems, models, and existing regulation, which is likely to create significant additional expert consultation.** While some aspects of the new accord are simple, others transfer significant responsibilities to the Central Bank of Russia, especially with regards to the trigger points and magnitude of the new counter-cyclical capital buffers and liquidity standards.

20. **In addition, more attention is likely to be required in non bank regulation.** As the banking sector is becoming increasingly regulated, financial groups may channel more activities through the non-banking sectors, which may become more prominent. Hence, there will be a need to focus on regulatory arbitrage, regulatory perimeter issues, quality of non-bank supervision, and macro-prudential supervision covering the linkages between banking and non-bank institutions (brokerages, unit funds, investment funds, pension funds, insurance companies).

21. **Without adequate technical capability, policy expertise and use of best practices, financial stability would remain inadequately overseen.** There is a risk that some regulators may not be able to implement all of the recommended changes to capital and liquidity

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4 National authorities are responsible for determining the equilibrium credit growth used as benchmark to determine when a possible credit bubble is forming, triggering the BCCP requirement.
requirements in their areas of coverage, failing to sufficiently strengthen the financial system’s resilience.
II. MACRO PRUDENTIAL TOOLS

22. **While the Basel III norms and new requirements have been defined and are in process of implementation, there are several macro prudential issues emerging and which need further definition.** These include both economic/financial triggers needed to impose macro prudential measures, as well as the range of potential macro prudential regulatory tools themselves. Basel III norms already address some macro prudential issues (such as countercyclical capital buffers, capital conservation buffers and systemic bank capital surcharges), but there are several other areas and tools which may be considered to fine-tune the macro prudential regulatory framework.

23. **One area of intersection between Basel III norms and new macro prudential tools pertains to the countercyclical requirement for additional capital.** For these to be invoked during high credit growth periods, the level of credit growth would need to exceed a certain threshold (for example: a significant change in the ratio of credit/GDP). The ratio or trigger, however, is subject to much discussion given different levels of financial depth and financial system development in each country. For example, a country with a ratio of 25 percent of credit/GDP may not consider a growth change from 25 percent to 29 percent as a reason to worry since credit depth would, overall, still be modest. A country with a high ratio, say 75 percent, may indeed worry, however, if credit growth accelerates. On the other hand, 4 percentage points up from 75 percent would represent less of a credit acceleration than 4 percentage points up from 25 percent. There is also scope for use of other triggers. This just illustrates that the calibration of what constitutes excessive credit growth to trigger countercyclical provisioning needs further analysis before settling on simplistic indicators. From a macro-prudential perspective, additional general loan loss provisions could also be considered as a counter-cyclical measure in addition to the countercyclical capital buffer.

24. **The above issue is an area of ongoing investigation which relies to a large extent on domestic financial depth and credit growth contexts, including sectoral concentrations.** This particular issue is not treated in this note but is being developed under a separate analytical piece. However this note lists the range of regulatory tools that can be applied for macro prudential purposes, under several different risk contexts.

25. **An institutional issue to consider is that the national authorities will need to decide which financial authority will invoke macro prudential regulatory tools.** Should such tools be invoked by specialized supervisory authorities (if these are housed under independent institutions) or by the central bank which has a unique role in macro financial oversight? Microprudential measures which have already existed but which also have certain macroprudential applications would typically be invoked by the financial supervisory agencies, while new macroprudential measures (e.g.: some new buffers under Basel III, and other new measures) could fall under the realm of the Ministry of Finance, the Central Bank’s macro-financial oversight area or other institutions. In the case of the Russian Federation this is less of
an issue as regards to banking oversight which falls under the Central Bank of Russia, though the Ministry of Finance could also potentially have a role in macro-financial oversight.

**THE TAXONOMY OF MACRO PRUDENTIAL-LINKED REGULATORY TOOLS**

26. Macro prudential regulatory tools have significant overlap with traditional and evolving micro prudential tools. However, the nature of their definition as “macro prudential” emanates from their possible use as: (i) additional regulations imposed during periods of possible financial stress or high risk, and (ii) their imposition based on the need to reverse financial risks that have macroeconomic impacts once these are triggered by measurable indicators showing impacts on several financial institutions. The section of this note below addresses the issues in “(i)” while alluding to the contexts for their usage, but does not pretend to recommend the precise context or trigger in which one or another macro prudential tool should be applied.

A. **Tools Related to Leverage and Exposure that cause Balance Sheet Imbalances**

27. **Capital Ratio.** Besides the new Basel III overall leverage or capital gearing ratio, the Basel II capital adequacy ratio based on risk weighted assets, can be adjusted during periods of systemic stress and/or where general asset quality throughout the economy is projected to deteriorate. Similarly the Basel I capital adequacy ratio can also be adjusted. An increase in the C.A.R. (e.g.: 10.5% to 12%) provides a preemptive capital cushion.

28. **Asset Risk Weights.** A more targeted approach versus adjusting the overall C.A.R. ratio, adjusts the risk weights on assets requiring a larger capital charge for regulatory solvency purposes (e.g.: 50% to 80%). While this can be seen as a standard prudential tool, it is considered macro prudential in certain circumstances as it: (a) changes the steady state asset weight used based on potential value shocks, and (b) is invoked when a large sector using bank funding is, from a macroeconomic view, projected to become loss making or lose market share.

29. **Special Dispensation Provisioning.** This refers to supervisory authorities requiring subject banks to increase loan loss provisions based on specific portfolio trends (e.g.: increasing defaults in residential real estate mortgages). While this can be used under standard prudential supervision powers, it may be difficult to invoke without a macro financial risk overlaying the context.

30. **Countercyclical dynamic provisioning and accounting of provisions.** Countercyclical provisioning involves larger allocations of general loan loss provisions during periods of high credit growth in order to: (a) provide additional provisioning buffers against the risks that high credit growth could imply in accelerating lower quality assets into the portfolio, and (b) provide a buffer from income in “good times” to increase overall provisions for use in “down” periods, thus lessening the need to provision as much in down periods when earnings are already depressed.
31. **Profit Distribution Restrictions.** Restricting payments of dividends to shareholders is used during periods of portfolio stress and losses so as to avoid eroding potential sources of bank reserves and liquidity, and allowing to build up capital buffers. The capital conservation buffer (CCB) under Basel III also has dividend payment restrictions, but additional discretionary restrictions under specific macro/financial risk contexts can also be applied.

32. **Credit Growth Caps.** Credit growth caps are seen as interventionist administrative measures and not always effective (e.g.: limiting bank’s credit growth to 10% per annum). In countries with subsidiaries of parent banks, the regulation can be evaded by simply redirecting customers to contract loans with parent banks abroad rather than the domestic based subsidiaries. However, these evasions cannot completely replace domestic based credit. Credit growth limits, however, could be used as a last resort in countries with an extremely accelerated increase in credit and where other measures (e.g.: interest rate increases) could be damaging to the economy in other respects. As well, if credit growth is based on increases in asset values (e.g.: housing) which appear to be creating a bubble, credit growth caps may be an unorthodox measure to put a brake on such a cycle.

33. **Prudential Capital Charges/Filters.** Having similar effects to increased asset risk weights or special dispensation provisioning, the use of prudential capital charges or capital filters refers to requirements to allocate increased solvency capital to specific asset classes or risks. This is equivalent to increasing the asset risk weight (thus requiring a proportional capital increase) but in cases where there is no previously set risk weight (e.g.: where there are problems due to lack of asset liquidity) a discretionary capital charge would impose an additional cushion. Prudential filters can also be applied based on moving averages of asset risks and use of smoothing trends, in which case the purpose is to apply through-the-cycle charges (similar to dynamic provisioning) and thus equalize and avoid sudden jumps in capital charges.

34. **Sectoral Lending Ceilings.** Similar to credit caps, sectoral lending ceilings would impose credit caps for lending to sectors which have become of higher risk (e.g.: funding an export enterprise or industry where global product demand has sharply dropped).

35. **Limits on Exposure of Specific Instruments.** At times a lending instrument (or its proliferation) can become a systemic risk in-and-of-itself, if overused. This can apply both to short as well as long maturity instruments. Overuse of long term investment loans to borrowers (e.g.: 5+ years maturity) can result in liquidity and non repayment risks, while over use of short term lending (revolving overdrafts) can mask borrower solvency due to the uneven usage and unpredictable repayment patterns. As well, even interbank loans, when certain institutions may be becoming insolvent, can generate contagion. Funding of special investment vehicles (SIVs) as seen during the 2008-09 crisis can generate all sorts of maturity, liquidity and capital risks if such assets (or liabilities) are not valued properly. Macro prudential supervisors can also restrict excessive use of certain lending (or funding) instruments if on a systemic level they would create imbalances or mask potential solvency risks.
36. **Stricter Asset Valuation Rules.** An alternative “real sector” approach to adjusting either asset risk weights, capital charges or provisions would be, if reliable data was available, to require that the valuation of certain assets (in the absence of reliable market information) be adjusted. For example, if financial institutions hold either non liquid bonds or stocks, or client borrowers are indebted based on a non liquid real estate market, the financial authorities can, if in possession of reasonable financial valuation models, require bank balance sheet adjustments to underlying asset values. In some cases, independent financial asset appraisers may be required to reassess the asset values underlying a loan. If a property value dips below a critical loan/value ratio (also see section below), this would be cause for imposing additional capital charges.

B. **Leverage Linked to Individual Financial Contracts and Borrower-Specific Risks**

37. **Loan to Value Ratio (LTV).** LTV is one of the key loan-contract types of macro prudential tools. As mentioned above, it is also part of the traditional micro prudential toolkit, but in periods of falling real estate values that is used as collateral, LTV can be a useful macro prudential tool. The LTV is the ratio of the loan amount divided by the value of the asset to be financed (e.g.: real estate property) and more pertinently, the value of the same is typically used as loan collateral. A low LTV ratio (loan/asset value) is safer for the lender. For mortgage financing, 80% or lower LTVs are considered safer as they provide an extra cushion of collateral value to guarantee the loan if the underlying asset value declines. A 100% LTV ratio or higher, particularly at an aggregate balance sheet level, is highly risky as it assumes no initial equity investment by the borrower to finance the asset. Given existing loan contracts, a change in LTV can typically not be applied legally to current outstanding loans, but can be effected for new loan originations. Supervisors can also apply differing asset risk weights for different LTV exposures (i.e., higher risk weights applied for higher LTV contracts).

38. **Cap on Debt Service / Income.** This ratio limits the share of borrower income to be used for loan debt service (principal plus interest). Also to be applied to new loan originations, it can be useful to adjust banking risks during periods of anticipated increasing unemployment or income declines, and/or expected periods of increasing interest rates; all of which would raise the ratio and thus raise borrowers’ debt servicing credit risks.

39. **Maturity Cap or Minimum Maturity.** This measure imposes a limit on loan maturity length, or conversely a requirement for minimum maturities for certain types of loans. A cap would be useful for variable rate loans during a period of expected interest rate increases and would mitigate potential credit risks from unexpected rises in borrowers’ debt service loads. A minimum maturity length would prevent overly short term loans being offered for long term investments (mortgages, business capital equipment, large asset purchases) which under reasonably stable conditions could exacerbate credit risks by requiring overly demanding debt servicing requirements.
40. **Countercyclical Margin Limits & Haircuts (Securities Markets).** This pertains to risks in periods of low liquidity in securities markets wherein regulators could lower investor leverage used to purchase securities (margins) to reduce such debt financing of securities and avoid trading defaults if securities values drop and investors are unable to pay their margin debt. This can easily occur, for example, when investors try selling or lending securities in their portfolio (which may have dropped in value). The converse of the margin is the use of securities as collateral for trading purposes, in which case regulators could impose ‘haircuts’ on the underlying collateral value of such securities, if periods of market turmoil are expected.

41. **Collateral Requirement / Valuation of Collateral.** This measure is more of a micro prudential measure but is intricately related to several of the above measures. In this case, the collateral requirement (e.g.: % of loan value) can be increased by regulation to limit bank over-exposure where there are insufficient guarantees. More difficult is the process of appropriately valuing collateral (given the several types of collateral), this being an area of high potential abuse by both creditors (to minimize the need for loss provisions) and debtors (to maximize the value of ‘available’ collateral). An independent methodology used by regulators could be used as a reference model from which to assess collateral values (and their reasonableness) used by banks.

42. **Reference Interest Rate(s) used for Mortgage Lending.** This measure, when justified, would control the interest rate base used by lenders for mortgage lending so as to reduce risks if a reference rate used is too volatile or expected to rise. For example, if there are inflationary pressures, new mortgage loan originations using variable rates based on the inflation index may need to be reconsidered as this could imply fast rising effective interest rates along with increasing borrower credit risks. Likewise, an overly volatile interest rate base (e.g.: a forex interbank rate during a period of lower bank liquidity and rising rates) may need to be modified and alternatives considered, to avoid spikes in lending rates.

43. **Performance Related Pay through the Longer Term Cycle.** Initiatives on this matter have now been included in the FSB remuneration implementation standards. There has been the perception that this measure may constitute interference in private sector policies, but there is movement in regulations to award performance-based pay in private financial institutions based on more than short term performance (i.e.: past the one year mark). The concept is to avoid rewarding transactions of high risk that generate systemic risks or asset bubbles but which have in the past rewarded financial sector specialists/managers on short term gains only. The idea would be to limit or stagger bonuses and to award them only once a reasonable period of stable positive performance is achieved (e.g.: not quarterly but past the one-year mark, and ideally over a 2-3 year period).

C. **Liquidity, Market & Currency Risks**

44. **Overall Liquidity Requirement.** Requirements for liquidity can comprise the ratio of short term liquid assets as a percentage of short term liabilities (for banks this would pertain to
the ratio of short term assets / deposits plus any other short term debt obligations). This is an essential tool to demand liquidity buffers during periods of liquid funding shortages. When financial industries are dependent on cross-border funding, for example, an anticipated requirement of a higher liquidity ratio is intended to generate larger buffers against expected withdrawal of short term funding sources. The ratio as well as its definition of its numerator (short term liquid assets) or denominator (short term liabilities due) can be modified based on prudential considerations regarding market conditions, available liquidity, and valuation of assets.

45. **Core Funding Requirement.** A core funding requirement or ratio is a requirement to have a minimum percentage of balance sheet funding sourced from certain types of ‘stable’ instruments. For example a core funding ratio could require that a bank’s funding be constituted 70% from retail deposits and if wholesale funding is used, with a maturity greater than one year. Core funding is also dependent on the main source of liquidity typically used by a specific financial institution. This can vary, depending on the type and structure of an institution, where the typical instruments used could include either deposits, fixed income securities, short term loans, parent company loans/deposits, and/or equity capital. A core funding liquidity requirement may be based on a very different liquidity source for banks versus brokerages, insurance companies, non deposit taking lenders, investment banks, investment funds or others; but the concept is to require a share above a certain threshold, from stable funding sources. Basel III’s net stable funding ratio (NSFR) sets a minimum for this requirement but additional discretionary requirements can be added in contexts of higher funding volatility.

46. **Loan/Deposit Ratio.** This ratio has more recently been used for standard prudential supervisory regulations but it has a large macro-prudential impact and the ratio can be adjusted to encourage safer bank funding practices. Essentially the ratio reflects the degree to which deposits fund the lending of a bank. A high L/D ratio means that there are a large proportion of loans funded by wholesale sources other than deposits (these could include bonds, interbank loans or others). Since deposit funding is seen as more stable than other sources, if an L/D ratio is high and wholesale source of liquidity/funding dries up, a bank could be at risk of becoming illiquid. A low L/D ratio (e.g.: 100% or less) would mean most of the bank’s assets are funded with deposits. A low L/D ratio is considered safer and more desirable but of course deposits can also be volatile though only when a subject bank is seen as weak or failing.

47. **Marginal Reserve Requirements.** Central banks have in various circumstances adjusted marginal reserve requirements (an amount representing a % of deposits or other liabilities placed in the central bank as cash, and not to be used for lending) as part of monetary policy in order to loosen or restrict bank funding sources for providing credit in the economy. Reserve requirements can also vary by type of funding instrument or currency of funding, in order to conduct macro prudential regulation, for example, to reduce a high level of credit growth. A higher marginal reserve requirement reduces the overall liquidity of the bank but can
also provide systemic risk cushion since the central bank can release the cash reserves placed by bank in case liquidity needs to be increased in the system on a temporary basis.

48. **Foreign Exchange (FX) restrictions on funding or lending, and FX reserve requirements.** Use of FX for funding or lending by banks within a domestic financial system using a domestic currency has typically been a primary concern of bank supervisors. The 2008-09 financial crisis highlighted the risks of FX lending which generated credit risks when FX currencies appreciated raising the repayment value of loans while end-borrowers earned income in domestic currency. Thus, FX macro prudent regulation is now a priority. Regulatory methods to control risks include: (a) requiring assets and liabilities in FX on a bank’s balance sheet to be fully matched or hedged, (b) restricting FX lending as a % of a bank’s share of its total lending, (c) restricting a bank’s FX borrowing or funding as a % of its total funding (or as a sub-limit of its total deposits), and (d) increasing the reserve requirement on FX deposits and/or funding (to be held in FX at the bank’s account at the central bank), effectively increasing the cost of FX based funding.

49. **Brokers/dealers/institutional investors – Local Currency reserves and FX reserves.** The financial crisis also showed that non-bank institutions such as brokers, dealers and several institutional investors could also destabilize the financial system if they ran out of liquidity and could not settle transactions, trades, or securities swaps in a timely manner. Therefore, as with bank reserve requirements on their liabilities, non bank institutions in the capital markets can also be subject to increased reserve requirements if this can assist for both: (a) reducing leverage in securities market funding or (b) increasing centralized liquidity cushions that can be released in times of market liquidity stress. One macro prudential use would be to limit use of leverage in funding securities if a bubble in the capital markets is likely to occur.

50. **Currency Mismatch Limit for Borrowers.** Above, the case of banks’ currency mismatches on their balance sheets was listed (FX section). However, even if banks are fully hedged for FX they may lend in FX to borrowers who do not earn in FX. If financial authorities foresee a future macro risk of currency depreciation and a large segment of the economy is borrowing in FX (for example, to obtain lower interest rates as is typically done), a macro prudent regulation can involve the restriction on banks to lend to borrowers that do not earn income in FX. This can be expressed as a percentage limit of lending in FX to all borrowers without FX income. Alternatively a higher asset risk weight and capital charge can be applied to such loans. Any such regulation needs careful thought out to ensure that it does not create a credit crunch if domestic currency interest rates are too high to be viable for lending without generating additional credit risks.

51. **Money Market Funds – Valuation Rules and Regulatory Flexibility.** As money market funds are key players in the financial markets in terms of supplying short term liquidity given their investments in the short term range of fixed income instruments, they are normally perceived as cash funds. However, as the recent financial crisis demonstrated even the value of
such funds can decline due to market sentiment on underlying securities of funds during liquidity shortages. Since money market funds and their securities frequently serve as cash-like collateral for capital market transactions, their valuation should be based on market indicators rather than the traditional valuation based on the book value of their assets. Market valuation would be more transparent. However, if a financial panic generates a sharp swing in the value of money market fund valuations, financial authorities can use very temporary regulatory flexibility or temporarily waive valuation requirements under a panic scenario, as a macro prudential tool to allow stability and smoothing in money fund values in order to maintain adequate liquidity and securities collateral circulating in the financial system.

D. Contagion Risks

52. Lending Concentration Limits. Lending concentration limits (by sector or by borrower) have traditionally constituted micro prudential banking regulations to prevent banks from over-concentrating their capital. However, they can also be used as macro prudential tools, for example, to reduce bank lending to risky sectors. For example if a bubble is forming in the property sector or in some industry such as an agricultural commodity seller, which may be expanding rapidly via credit growth, the financial authorities could tighten regulations on sector concentration limits for such lending so that banks diversify their lending into other industries and avoid a bubble and crash in a sector of excessive growth.

53. Systemic Capital Surcharge. Given the financial system risk that a large systemically important bank can generate, if failure occurs, a preventive macro prudential tool as already contemplated under Basel III, can involve requiring a capital surcharge for such banks to increase their solvency margins. Capital surcharges should generally be grounded in an identified risk or a number of specific risks than can be seen as potentially affecting a systemically important bank. An anticipated shortage of liquidity, or increases in the risks of certain sectors or borrowers where such banks are creditors, or other adverse trends, could trigger action from the financial authorities to require that such banks allocate additional capital to cover a potential likelihood of such risks materializing. This would effectively increase the capital adequacy ratio (C.A.R.) of such bank and thus provide an increased solvency cushion in case of balance sheet problems (both on the asset and the liability side). A capital surcharge can also be applied to all banks in the financial system if the risk is common (e.g.: declining real estate collateral values across the economy – in this latter case, besides a capital surcharge for increased asset risk, this may also require additional loss provisions given the decline in loan collateral).

54. Capital Charges for Subsidiary/Parent Bank Risks. If domestic banks are foreign owned and rely on a substantial portion of their funding from parent banks (via parent bank loans or deposits) and such parent banks may be subject to liquidity shortages (e.g.: from an interbank credit crunch in a sub-region as occurred during the recent financial crisis), financial authorities may consider adding a capital surcharge to domestic subsidiary banks based on their high
reliance on such sources of funding which are considered as more risky sources than retail deposits, in the absence of an official internationally sanctioned agreement from parent banks to continue or sustain such funding. As well, if a domestic bank is a parent company and its balance sheet contains significant portions of its lending to related parties such as subsidiaries or related financial institution operating at home or abroad, such related lending could also warrant a higher capital surcharge if deemed to have increased an risk from the borrowing subsidiary institution (or country) during situations of financial stress. In such a situation the parent bank would be monitored on a solo rather than a consolidated group basis.

55. **Preemptive Bank Resolution.** While already being considered under the G20 agenda as part of the new financial architecture to deal with bank insolvency, the use of preemptive bank resolution procedures can also be executed as part of the consequence of a process of macro prudential preemptive measures to resolve potential bank failures before they cause financial contagion and deposit runs. Preemptive bank resolution essentially would involve triggering an orderly bank dissolution once regulatory/solvency capital fell below acceptable levels. In such a case, the financial authorities would have the legal right to suspend shareholder rights in order to transfer viable assets and matching deposits to potential acquiring banks with a solid financial condition. If no acquiring banks were available, the good assets and deposits could be placed in a temporary ‘good bank’ to maintain an active (going concern) operation while a buyer was sought. The non performing assets would be placed in a ‘bad bank’ to be liquidated. The securitization of good assets into bonds could also be used as method to distribute these assets with deposits to several sound banks within the system. Another method to resolve banks preemptively would be the conversion of subordinate creditors into shareholders with the requisite sharing of losses, to make sure the balance sheet capital is ‘whole.’ All such measures above operate on the assumption that they are less costly than paying off all insured depositors directly.

56. **Deposit Insurance Premium Increases based on Asset Growth.** Since high credit growth can lead to asset bubbles and defaults and such growth if frequently funded by an increase in retail deposits, financial authorities can state that, in the absence of other regulatory measures, this increases the risk of asset defaults and thus taxpayer liabilities to pay off insured depositors. Thus, a macro-linked regulation could increase the premiums that banks pay to fund the deposit insurance fund, in proportion to the asset/credit growth that is funded from their deposits. In this way, the increase in the potential liability to insured depositors is shared by banks if credit growth is accelerating and generating potential risks.

57. **Interbank Funding – Preventive Regulation.** While interbank funding is typically considered as relatively safe and stable wholesale funding, if banking institutions rely on liquidity from a small number of institutions, unusual securitizations, or from banks abroad, this can generate liquidity and solvency risks if such sources dry up, as occurred during the 2008-09 crisis. In particular, if banks rely excessively on interbank funding rather than on retail deposit funding, this can generate funding shortages in periods of financial distress. As a macro
financial prudential tool, authorities may wish to require the diversification of funding from banks that rely excessively on short term interbank funding or reliance on particular instruments. A capital surcharge for funding risk can also be a regulatory measure for consideration. This issue has some parallels and relation with the problems of “core funding” and “parent/subsidiary bank funding” discussed above. The key risk involves the reliance by a bank on a limited set of interbank funding partners that could be affected in a systemic distress situation.

Conclusion

58. The global macro prudential regulatory framework is at an early stage of development yet emerging rapidly with several parallel frameworks and tools being laid out. The financial authorities in the Russian Federation should consider the entire menu of options at their disposal when designing appropriate macro prudential regulations to mitigate existing or contingent risks in the financial system.

59. Careful consideration should be given to the appropriate interaction and division of roles between micro prudential traditional regulatory responsibilities and new macro prudential tools. In this regard, policy coordination between bodies responsible for day-to-day regulation and supervision and with those responsible for macro prudential interventions needs to be closely aligned to prevent the materialization of conflicting incentives or regulatory overshooting.

60. In applying macro prudential policy it would be most appropriate for the financial authorities to map the potential economic/financial conditions to the best available measures to optimize their impact and minimize disruptions or losses from the risks identified. This will require close familiarity with the full set of tools available, and the economic conditions that would be most apt to react toward specific measures leading to increased stability when such specific macro prudential measures are applied. For this purpose, a continuous reassessment of economic conditions during a crisis or pre-crisis period will be needed to ensure that macro prudential tools are dynamically adjusted as underlying conditions change, due both to exogenous effects as well as to regulatory effects directly causing trend reversals.